

ABSTRACT

A control arrangement and method is provided for detecting and responding to
5 disturbances in electrical power systems. In a preferred arrangement, an integration
is initiated that is based on a comparison of actual voltage of a source and a
reference voltage. When the integration exceeds a predetermined value, the source
is considered unreliable. Also in a preferred arrangement, a determination is made
as to whether or not the disturbance is a downstream fault condition. For example,
10 this is useful for applications where a transfer is made from a first source to a second
source when predetermined disturbances are detected. In this manner, the transfer
of the load to a second source is avoided which would continue the supply of the
downstream fault. Additionally, the arrangement distinguishes between various
degrees of disturbances to permit appropriate response based on the severity and
15 type of disturbance. For example, a first immediate response, i.e. without intentional
delay, is provided for more severe disturbances while a second delayed response is
provided for less severe disturbances. The control arrangements transfers the load
to an alternate source of power via the use of a high-speed source-transfer switching
system that both avoids undesirable current flow between sources and minimizes
20 undesirable transfer delays.